

1 **ABSTRACT**

2 A method of measuring the azimuth and resetting to zero azimuth
3 automatically is disclosed. Multiple azimuths in longitudinal and latitudinal
4 orientations are sampled by two orthogonal magnetic sensors installed in an
5 azimuth meter, and then are output by corresponding first and second sine wave
6 signals. These two sine wave signals are normalized by adjusting them to be of
7 equal amplitude. The maximum and minimum values of the normalized sine
8 wave signals are used to compute the average values of the respective normalized
9 sine wave signals being of equal amplitude on the positive and negative sides.
10 The resultant sine wave signals serve as the zero reference values for comparison
11 with subsequently taken measuring signals to yield the actual azimuth. The
12 numerical computation for the azimuth can be performed by a microprocessor
13 with accuracy and high speed.